IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A receiver comprising:

antenna selection circuitry to select more than one of a plurality of spatially diverse antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising a plurality of subchannels; and

combining circuitry to combine corresponding frequency domain symbol-modulated subcarriers from the selected antennas to generate combined symbol-modulated subcarriers for each subchannel of the wideband channel.

2. (Original) The receiver of claim 1 wherein each subchannel of the wideband channel comprises a plurality of orthogonal frequency division multiplexed subcarriers, and

wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel.

3. (Original) The receiver of claim 1 wherein the combining circuitry comprises maximum-ratio combining circuitry to combine the corresponding frequency domain symbol-modulated subcarriers of the subchannels, and

wherein the combining circuitry comprises maximum-ratio combining circuitry to weight at least some of the frequency domain symbol-modulated subcarriers prior to combining the corresponding frequency domain symbol-modulated subcarriers substantially proportional to signal strength.

4. (Original) The receiver of claim 1 wherein parallel groups of time domain samples are to be generated from each of the subchannels received by each of the antennas, and

wherein the receiver further comprises fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples.

5. (Original) The receiver of claim 1 wherein the antenna selection circuitry it so select a first antenna of the plurality of antennas to receive the subchannels of the wideband channel,

wherein the antenna selection circuitry is to select a second antenna of the plurality of antennas to further receive the subchannels of the wideband channel, and

wherein the antenna selection circuitry is to select the first and the second antennas from the plurality based on an average signal-to-noise ratio of signals in the subchannels.

6. (Original) The receiver of claim 5 further comprising:

low-noise amplifiers to amplify radio-frequency signals of at least both subchannels;

downconversion circuitry to downconvert radio-frequency signals for each subchannel received through each antenna; and

analog-to-digital conversion circuitry to generate digital signals for each subchannel received through each antenna.

7. (Currently Amended) A receiver comprising:

antenna selection circuitry to select more than one of a plurality of spatially diverse antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising a plurality of subchannels; and

combining circuitry to combine corresponding frequency domain symbol-modulated subcarriers from the selected antennas to generate combined symbol-modulated subcarriers for each subchannel of the wideband channel,

wherein parallel groups of time domain samples are to be generated from each of the subchannels received by each of the antennas,

wherein the receiver further comprises fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples,

~~The receiver of claim 4~~ wherein the fast Fourier transform circuitry comprises:

first fast Fourier transform circuitry to perform a fast Fourier transform on parallel groups of time domain samples of a first subchannel from the first antenna to generate frequency domain symbol-modulated subcarriers of the first subchannel from the first antenna;

second fast Fourier transform circuitry to perform a fast Fourier transform on parallel groups of time domain samples of a second subchannel from the first antenna to generate frequency domain symbol-modulated subcarriers of the second subchannel from the first antenna;

third fast Fourier transform circuitry to perform a fast Fourier transform on parallel groups of time domain samples of the first subchannel from the second antenna to generate frequency domain symbol-modulated subcarriers of the first subchannel from the second antenna; and

fourth fast Fourier transform circuitry to perform a fast Fourier transform on parallel groups of time domain samples of the second subchannel from the second antenna to generate frequency domain symbol-modulated subcarriers of the second subchannel from the second antenna.

8. (Original) The receiver of claim 7 wherein the combining circuitry comprises maximum ratio combining circuitry to combine, for each subcarrier of the first subchannel, the frequency domain symbol-modulated subcarriers provided by the first and third fast Fourier transform circuitry to provide combined frequency domain symbol-modulated subcarriers for the first subchannel, and

wherein the maximum-ratio combining circuitry is to combine, for each subcarrier of the second subchannel, the frequency domain symbol-modulated subcarriers provided by the second and fourth fast Fourier transform circuitry to provide combined frequency domain symbol-modulated subcarriers for the second subchannel.

9. (Original) The receiver of claim 1 further comprising:

equalizer circuitry to perform separately for the more than one subchannel, a channel equalization on the combined symbol-modulated subcarriers of an associated subchannel provided by the combining circuitry.

10. (Original) The receiver of claim 9 further comprising:

subcarrier demappers to demap, after the channel equalization, the combined symbol-modulated subcarriers of each subchannel to generate parallel groups of bits from the subcarriers; and

additional processing circuitry to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel.

11. (Original) The receiver of claim 10 wherein the subcarrier demappers are to demap the subcarriers of each subchannel in accordance with individual subcarrier modulation assignments particular to the subchannel to generate the parallel groups of bits.

12. (Original) A method comprising:

selecting at least two antennas from a plurality of antennas to receive more than one subchannel of a wideband channel, the subchannels comprising a plurality of orthogonal frequency division multiplexed subcarriers;

combining corresponding frequency domain symbol-modulated subcarriers of the subchannels to generate combined symbol-modulated subcarriers for each subchannel; and

processing the combined symbol-modulated subcarriers to demodulate an orthogonal frequency division multiplexed symbol from the more than one subchannel.

13. (Original) The method of claim 12 further comprising:

performing fast Fourier transforms on parallel groups of time domain samples for the subchannels received through each of the antennas,

wherein the combining comprises maximum-ratio combining comprising weighting at least some of the frequency domain symbol-modulated subcarriers and proportionally combining the weighted frequency domain symbol-modulated subcarriers of the more than one subchannel, and

wherein the proportionally combining comprises combining the frequency domain symbol-modulated subcarriers substantially proportional to their signal strength.

14. (Original) The method of claim 12 wherein selecting comprises:

selecting a first pair of antennas of the plurality of antennas to receive one subchannel of the wideband channel;

selecting a second pair of antennas of the plurality of antennas to further receive the one subchannel of the wideband channel; and

selecting the first and the second pairs of antennas from the plurality based on a signal-to-noise ratio of signals of the subchannel.

15. (Original) The method of claim 14 further comprising:

amplifying, for each selected antenna, radio-frequency signals of the more than one subchannel;

individually downconverting the radio-frequency signals separately for each subchannel and received through each antenna; and

generating digital signals for each subchannel received through each antenna.

16. (Original) The method of claim 12 further comprising performing a channel equalization separately for the more than one subchannel on the combined symbol-modulated subcarriers of an associated subchannel.

17. (Original) The method of claim 16 further comprising:

demapping, after performing the channel equalization, the combined symbol-modulated subcarriers of each subchannel to generate parallel groups of bits from the subcarriers; and

processing the parallel groups of bits of the more than one subchannel to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol.

18. (Original) The method of claim 17 wherein the demapping comprises demapping the subcarriers of each subchannel in accordance with individual subcarrier modulation assignments particular to the subchannel to generate the parallel groups of bits.

19. (Original) A receiver comprising:

antenna selection circuitry to select one or more of a plurality of spatially diverse antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising more than one of a plurality of subchannels; and

subcarrier demodulators to demodulate frequency domain symbol-modulated subcarriers of the more than one subchannel to generate parallel groups of bits from the subcarriers,

wherein the processing circuitry is to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel.

20. (Original) The receiver of claim 19 wherein each subchannel of the wideband channel comprises a plurality of orthogonal frequency division multiplexed subcarriers,

wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel, and

wherein the antenna selection circuitry selects the one or more antennas from the plurality based on a signal-to-noise ratio of signals of the subchannels.

21. (Original) The receiver of claim 20 further comprising:

downconversion circuitry to individually downconvert radio-frequency signals for each subchannel;

analog-to-digital conversion circuitry to generate digital signals for each of the subchannels;

processing circuitry to generate parallel groups of time domain samples from the digital signals of each of the subchannels; and

fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples to generate the frequency domain symbol-modulated subcarriers for each of the subchannels for subcarrier demodulation.

22. (Original) A receiver comprising:

radio-frequency circuitry to receive an orthogonal frequency division multiplexed symbol over a subchannel through a plurality of spatially diverse antennas; and

maximum-ratio combining circuitry to combine corresponding frequency domain symbol-modulated subcarriers from each of the antennas to generate combined symbol-modulated subcarriers for the subchannel.

23. (Original) The receiver of claim 22 wherein the subchannel comprises a plurality of orthogonal frequency division multiplexed subcarriers,

wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel, and

wherein the maximum-ratio combining circuitry is to weight the frequency domain symbol-modulated subcarriers prior to combining the corresponding frequency domain symbol-modulated subcarriers substantially proportional to their signal strength.

24. (Original) The receiver of claim 23 further comprising:

processing circuitry to generate parallel groups of time domain samples from signals received by each of the antennas; and

fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples to generate the frequency domain symbol-modulated subcarriers from signals received by each antenna,

the processing circuitry to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the subchannel received by each antenna.

25. (Original) A system comprising:

a plurality of substantially omnidirectional spatially diverse antennas;

antenna selection circuitry to select more than one of the antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising a plurality of frequency-separated subchannels; and

maximum-ratio combining circuitry to combine corresponding frequency domain symbol-modulated subcarriers from the selected antennas to generate combined symbol-modulated subcarriers for each subchannel of the wideband channel.

26. (Original) The system of claim 25 wherein each subchannel of the wideband channel comprises a plurality of orthogonal frequency division multiplexed subcarriers,

wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel, and

wherein the maximum-ratio combining circuitry is to weight the frequency domain symbol-modulated subcarriers prior to combining the corresponding frequency domain symbol-modulated subcarriers substantially proportional to the signal strength of an associated subcarrier.

27. (Original) The system of claim 26 wherein parallel groups of time domain samples are to be generated from each of the subchannels received by each of the antennas,

wherein the system further comprises fast Fourier transform circuitry to perform fast Fourier transform on the parallel groups of time domain samples,

wherein the antenna selection circuitry is to select a first antenna of the plurality of antennas to receive the subchannels of the wideband channel,

wherein the antenna selection circuitry is to select a second antenna of the plurality of antennas to further receive the subchannels comprising the wideband channel,

wherein the antenna selection circuitry is to select the first and the second antennas from the plurality based on an average signal-to-noise ratio of signals in the individual subchannels, and

wherein the system further comprises:

downconversion circuitry to individually downconvert radio-frequency signals for each subchannel and received through each antenna; and

analog-to-digital conversion circuitry to generate digital signals for each subchannel received through each antenna.

28. (Original) A reconfigurable receiver comprising:

antenna selection circuitry to select one or more of a plurality of spatially diverse antennas to receive one or more of a plurality of subchannels; and

maximum-ratio combining circuitry to combine, when more than one antenna per subchannel is selected, corresponding symbol-modulated subcarrier of subchannels from different selected antennas.

29. (Original) The receiver of claim 28 wherein the antenna selection circuitry is to select at least one antenna of the plurality to receive either three or four subchannels when a high-throughput mode is enabled,

wherein the antenna selection circuitry is to select up to four of the antennas to receive a single subchannel when an increased-range mode is enabled, and

wherein the antenna selection circuitry is to select at least two of the antennas to simultaneously receive two of the subchannels when the increased-range and the high-throughput modes are enabled,

wherein the antenna selection circuitry is to select the antennas based on an average signal-to-noise ratio of the subchannels.

30. (Currently Amended) A reconfigurable receiver comprising:

antenna selection circuitry to select one or more of a plurality of spatially diverse antennas to receive one or more of a plurality of subchannels; and

maximum-ratio combining circuitry to combine, when more than one antenna per subchannel is selected, corresponding symbol-modulated subcarrier of subchannels from different selected antennas,

wherein the antenna selection circuitry is to select at least one antenna of the plurality to receive either three or four subchannels when a high-throughput mode is enabled,

wherein the antenna selection circuitry is to select up to four of the antennas to receive a single subchannel when an increased-range mode is enabled,

wherein the antenna selection circuitry is to select at least two of the antennas to simultaneously receive two of the subchannels when the increased-range and the high-throughput modes are enabled,

wherein the antenna selection circuitry is to select the antennas based on an average signal-to-noise ratio of the subchannels,

wherein the receiver comprises ~~The receiver of claim 29 further comprising~~ up to four single channel pipelines to process signals, wherein

when the high-throughput mode is enabled, each single channel pipeline is to process signals from an associated one of the either three of four subchannels,

when the increased-range mode is enabled, each single channel pipeline is to process signals of the single subchannel received by an associated one of the selected antennas, and

when the increased-range and the high-throughput modes are both enabled, a first single channel pipeline is to process signals of a first subchannel received by a first of the selected antennas, a second single channel pipeline is to process signals of a second subchannel received by the first antenna, a third single channel pipeline is to process signals of the first subchannel received by a second of the selected antennas, and a fourth single channel pipeline is to process signals of the second subchannel received by the second of the selected antennas.

31. (Currently Amended) A computer-readable ~~machine-readable~~ medium that provides instructions which, when executed by one or more processors, cause said processors to perform operations comprising:

selecting at least two antennas from a plurality of antennas to receive more than one subchannel of a wideband channel, the subchannels comprising a plurality of orthogonal frequency division multiplexed subcarriers;

combining corresponding frequency domain symbol-modulated subcarriers of the subchannels to generate combined symbol-modulated subcarriers for each subchannel; and

processing the combined symbol-modulated subcarriers to demodulate an orthogonal frequency division multiplexed symbol from the more than one subchannel.

32. (Currently Amended) The computer-readable ~~machine-readable~~ medium of claim 31 wherein the instructions, when further executed by one or more of said processors, cause said processors to perform operations further comprising:

performing fast Fourier transforms on parallel groups of time domain samples for the subchannels received through each of the antennas,

wherein the combining comprises maximum-ratio combining comprising weighting at least some of the frequency domain symbol-modulated subcarriers and proportionally combining the weighted frequency domain symbol-modulated subcarriers of the more than one subchannel, and

wherein the proportionally combining comprises combining the frequency domain symbol-modulated subcarriers substantially proportional to their signal strength.

33. (Currently Amended) The computer-readable ~~machine-readable~~ medium of claim 31 wherein the instructions, when further executed by one or more of said processors, cause said processors to perform operations further comprising:

selecting a first pair of antennas of the plurality of antennas to receive the more than one subchannel of the wideband channel;

selecting a second pair of antennas of the plurality of antennas to further receive the more than one subchannel of the wideband channel; and

selecting the first and the second pairs of antennas from the plurality based on a signal-to-noise ratio of signals in the subchannels.